Drug-induced lung injury (DLI) in cancer patients is a possibility with almost all anticancer drugs, including cytotoxic anticancer drugs, molecular targeted agents, and immune checkpoint inhibitors. Although the precise mechanisms involved in DLI are not fully understood, it is thought to be caused by direct toxicity to pulmonary tissue and/or immune-mediated effects. Furthermore, this condition is influenced by various host and environment factors. The risk factors for the development of DLI are as follows: preexisting pulmonary lesions (interstitial lung disease / pulmonary fibrosis / chronic inflammatory diseases), hyperoxia, postoperative acute lung injury, combination therapy with anticancer drugs, radiation therapy, genetic factors, aging, or smoking. Although preclinical safety studies indicated no evidence of injury to intact lungs, some clinical cases showed DLI. Furthermore, despite the observation of immune-related adverse events (irAEs) in animal models, the quality and quantity of irAEs in clinical, including prediction of target organs, has not been fully established. In this presentation, I will outline pathological features and issues affecting various preclinical lung injury models, and then introduce preclinical evaluations of DLI using the bleomycin-induced lung injury model. In addition, translational issues, which is the problem of difference between preclinical and clinical, will be discussed.
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